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EXAMINER	
WONG, KIN C	

ART UNIT	PAPER NUMBER
2651	7

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/846,426	BI ET AL.	
	Examiner	Art Unit	
	K. Wong	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Drawings

The drawings (filed on 4/30/01) have been approved by the draftsman.

Claim Objections

Claims (20-30) are objected to because of the following informalities: these claims recited "step (s)" while the limitations are directed to apparatus. Such recitation is confusing because the claims could not be determined as an apparatus or method claims. The examiner suggests a replacement of the word "step" with an "instruction (or scheme or program)" and along with an antecedent base in the instant specification. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims (1-30) are rejected under 35 U.S.C. 102(e) as being anticipated by Ehrlich et al (6519107).

Regarding claim 13: Ehrlich et al discloses a disc drive including:

a basedeck (element 32 in figure 1 of Ehrlich et al) supporting a spindle motor (element 14) assembly;

a rotatable disc surface (element 12) having an outer diameter and an inner diameter attached to the spindle motor assembly, the disc surface for data storage;

an actuator (element 20) assembly supported by the basedeck and having a read/write head rotationally positionable adjacent the disc surface (as depicted in figure 1), the read/write head (see col. 8, lines 41-47 of Ehrlich et al) comprising a read element for reading data from the disc surface and a write element offset (see figures 3A and 4A in Ehrlich et al) from the read element in one direction across the disc surface from the outer diameter to the inner diameter for writing data to the disc surface; and

a first head position control field stored on a first portion of the disc surface for correcting position of the read element in relation to the first portion and the write element in relation to a second portion of the disc surface while the write element writes a second head position control field to the second portion offset from the first head position control field of the first portion a distance substantially the same as the offset of the write element from the read element by instructions (steps) for writing the second head position control field to the disc surface (see col. 11, line 51 to col. 14, line 54 of Ehrlich et al where Ehrlich et al discloses the writing of servo position control field (or servo bursts) for the read/write head).

Regarding claim 14: Ehrlich et al depicted in figure 3A and 4A that the read element is separated from the write element by a predetermined spacing, and wherein the read element is substantially radially aligned and substantially circumferentially aligned to the write element.

Regarding claim 15: Ehrlich et al teaches that the first head position control field of the first portion having a geometric shape provides position correction information for position-control of the read element in relation to the first portion while the write element writes the second head position control field to the second portion in conformance with the geometric shape of the first head position control field of the first portion (in col. 13, line 29 to col. 14, line 7 of Ehrlich et al).

Regarding claim 16: Ehrlich et al depicted in figures 8 and 9 that the first portion of the disc surface comprises a data track and the head position control field of the first portion comprises an "A" burst adjacent a "B" burst.

Regarding claim 17: Ehrlich et al depicts in figures 8 and 9 that the second portion of the disc surface comprises a data track and the head position control field of the second portion comprises an "A" burst adjacent a "B" burst.

Regarding claim 18: Ehrlich et al teaches that which the head position control field of the first portion and the head position control field of the second portion are offset, substantially radially aligned and substantially circumferentially aligned one to the other wherein the offset is substantially the same as the offset of the read element from the write element of the read/write head (in col. 13, line 46 to col. 14, line 19 of Ehrlich et la).

Regarding claim 19: Ehrlich et al teaches that the write element of the read/write head is an inductive element and the read element of the read/write head is a magneto resistive element (in col. 8, lines 41-47 of Ehrlich et al).

Regarding claim 20: Ehrlich et al teaches that the instructions (steps) for writing the second head position control field to the disc surface comprises instructions (steps) of (see col. 9, line 56 to col. 10, line 7 of Ehrlich et al):

(a) connecting the disc drive to a position information writing apparatus for writing the first head position control field to the disc surface;

(b) positioning the read/write head of the disc drive in relation to the first portion of the disc surface with a position signal of the position information writing apparatus while writing the first head position control field on the first portion of the disc surface using the write element of the read/write head; and

(c) reading the first head position control field of the first portion with the read element of the read/write head to produce a head position control signal, and combining the head position control signal with the position signal of the position information writing apparatus to position-control the write element in relation to the second portion of the disc surface while writing the second head position control field on the second portion of the disc surface in col. 11, line 26 to col. 12, line 56 of Ehrlich et al).

regarding claim 21: Ehrlich et al 21 teaches that wherein the connecting step (a) comprises steps of:

(a1) connecting a connector of the actuator assembly of the disc drive to the position information writing apparatus for communication between the disc drive and the position information writing apparatus during writing of the first head position control field to the disc surface of the disc drive;

(a2) attaching a first end of a push-pin to the actuator assembly and a second end of the push-pin to a positioner of the position information writing apparatus, the push-pin providing a mechanical link between the actuator assembly and the positioner during writing of the first head position control field; and

(a3) applying power to the position information writing apparatus to initiate writing of the first head position control field to the disc surface of the disc drive (in col. 8, line 65 to col. 9, line 55 of Ehrlich et al).

regarding claim 22: Ehrlich et al discloses that wherein the first portion of the disc surface comprises a plurality of data tracks wherein each data track comprises a plurality of the head position control field, and in which the positioning step (b) comprises steps of: (b1) measuring the offset of the write element in relation to the read element for use in determining a number of data tracks corresponding to a plurality of data tracks comprising the first portion of the disc surface; (b2) holding the write element in a fixed position in relation to the position information writing apparatus while writing the first head position control field on the disc surface therein forming a first data track of the plurality of data tracks of the first portion of the disc surface; (b3) moving the write element to a second position adjacent the first data track of the first portion for formation of a second data track of the plurality of data tracks of the first portion, the second position based on the measured offset of the write element in relation to the read element; (b4) maintaining the write element in a fixed position in relation to the first data track of the first portion while writing the second head position control field on the disc surface therein forming the second data track of the plurality of data tracks of the

first portion of the data surface; and (b5) repeating steps (b3) and (b4) until all head position control fields for each data track of the plurality of data tracks comprising of the first portion of the disc surface have been written to the disc surface (in col. 11, line 51 to col. 12, line 17 of Ehrlich et al).

Regarding claim 23: Ehrlich et al teaches that wherein the first portion comprises a plurality of adjacent data tracks and in which a portion determination of the disc surface utilized by the first portion of the disc surface comprises steps of: (bi) measuring the offset of the write element in relation to the read element for use in determining a number of adjacent data tracks comprising the first portion of the disc surface; (bii) determining the number of adjacent data tracks representing the measured offset of the read element and the write element; and (biii) controlling position of the write element in relation to the first portion of the disc surface using the position information writing apparatus while writing disc level servo information on each of the adjacent data tracks of the first portion such that when the read element is position-controlled on the first data track of the first portion the write element is position-controlled on a first data track of a second portion of the disc surface (in col. 11, line 50 to col. 12, line 42 and col. 14, lines 34-54 of Ehrlich et al).

Regarding claim 24: Ehrlich et al teaches that the plurality of data tracks comprise a number of adjacent data tracks and in which moving step (b3) further comprises steps of: (b3a) determining the number of adjacent data tracks comprising the first portion of the disc surface; and (b3b) writing each of the plurality of the head position control field on each of the number of adjacent data tracks of the first portion

such that when the read element of the read/write head is position-controlled on a first adjacent data track of the first portion of the disc surface, the write element of the read/write head is position-controlled on a first data track of the second portion of the disc surface (in col. 11, line 50 to col. 12, line 42 and col. 14, lines 34-54 of Ehrlich t al).

Regarding claim 25: Ehrlich et al teaches that the first portion of the disc surface comprises a plurality of data tracks, each data track providing a plurality of track specific servo sectors having a head position control field, and in which the reading step (c) comprises steps of: (c1) reading the head position control field of a selected track specific servo sector of the plurality of track specific servo sectors of a selected data track of the plurality of data tracks of the first portion of the disc surface to position-control the read/write head relative to the first portion of the disc surface using the position information writing apparatus; (c2) transducing a position error signal from the position control field for use in determining position correction of the read element of the read/write head in relation to the selected data track; (c3) isolating a disturbance acting on the disc surface and determining a level of the head position control signal commensurate with the position correction of the read element in relation to the position information writing apparatus to apply to compensate effects of the isolated disturbance; and (c4) recording the level of the head position control signal for use in compensating the write element position in relation to the position information writing apparatus while writing a head position control field on the second portion of the disc surface (in col. 14, lines 34-54 to col. 15, lines 18-39 of Ehrlich et al).

Regarding claim 26: Ehrlich et al teaches that the writing portion of reading step (c) further comprises steps of: (c5) reading the head position control field of the selected data track of the first portion and the recorded head position control signal, for use in correcting the position of the write element in relation to the second portion of the disc surface; (c6) combining the head position control signal with the position signal of the position information writing apparatus to position-control the write element in relation to the position information writing apparatus; and (c7) writing the head position control field of the second portion radially offset from the head position control field of the selected track specific servo sector of the plurality of track specific servo sectors of the selected data track of the plurality of data tracks of the first portion of the disc surface by an amount substantially equaling a spacing separating the read element of the read/write head from the write element of the read/write head (in col. 11, lines 26-50 of Ehrlich et al).

Regarding claim 27: Ehrlich et al teaches that the position information writing apparatus of connecting step (a) is the servo track writer and the produced head position control signal of reading step (c) compensates effects of selective frequencies present during writing of the first head position control information (in col. 15, line 49 to col. 16, line 43 of Ehrlich et al).

Regarding claim 28: Ehrlich et al teaches that the second portion of the disc surface comprises a plurality of data tracks, each data track providing a plurality of track specific servo sectors having a head position control field and in which the head position control field of the second portion of writing step (c7) is the head position control field of

a selected track specific servo sector of the plurality of track specific servo sectors of a selected data track of the plurality of data tracks of the second portion of the disc surface written substantially circumferentially aligned to the head position control field of the first portion of writing step (c7) (in col. 15, lines 18-39 of Ehrlich et al).

Regarding claim 29: Ehrlich et al teaches that the second portion of the disc surface comprises a plurality of data tracks, each data track providing a plurality of track specific servo sectors having a head position control field and in which the head position control field of the second portion of writing step (c7) is the head position control field of a selected track specific servo sector of the plurality of track specific servo sectors of a selected data track of the plurality of data tracks of the second portion of the disc surface written substantially radially aligned to the head position control field of the head position information of the first portion of writing step (c7) (in col. 15, lines 18-39 of Ehrlich et al).

Regarding claim 30: Ehrlich et al discloses an apparatus made by instructions (steps) comprising: reading head position control information from a first portion of a rotatable disc surface with a read element of a read/write head to produce a head position control signal; and a step (instruction) for combining the head position control signal with a position signal [there]of to position-control the read element of the read write/head relative to the first portion while writing head position control information on a second portion of the disc surface with a write element of the read/write head (in col. 14, lines 34-54 of Ehrlich et al).

Regarding claims 1-12: method claims (1-12) are drawn to the method of using the corresponding apparatus claimed in claims (13-29). Therefore method claims (1-12) correspond to apparatus claims (13-29) and are rejected for the same reasons of anticipation as used above.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Magee (6522494), Szita (6608731) and Chainer et al (6633451) are cited for servo writing with offset read/write head.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Wong whose telephone number is (703) 305-7772.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Hudspeth can be reached on (703) 308-4825. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for all communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Ekw

2 Feb 04

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